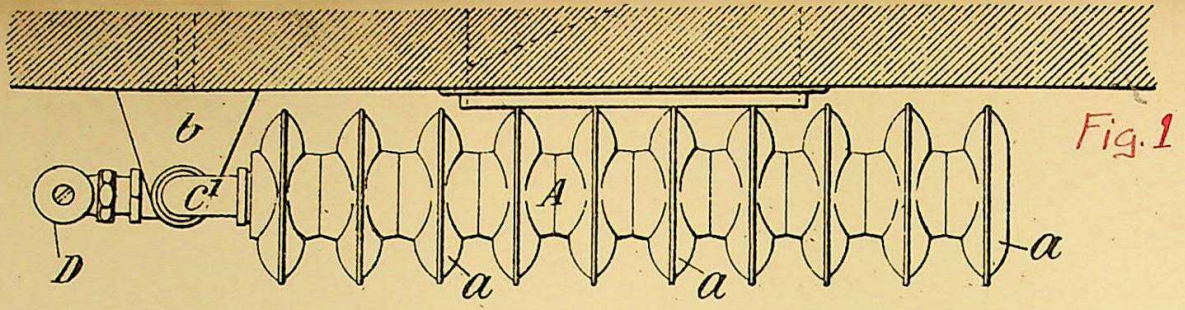


Fig. 1

Fig. 2.

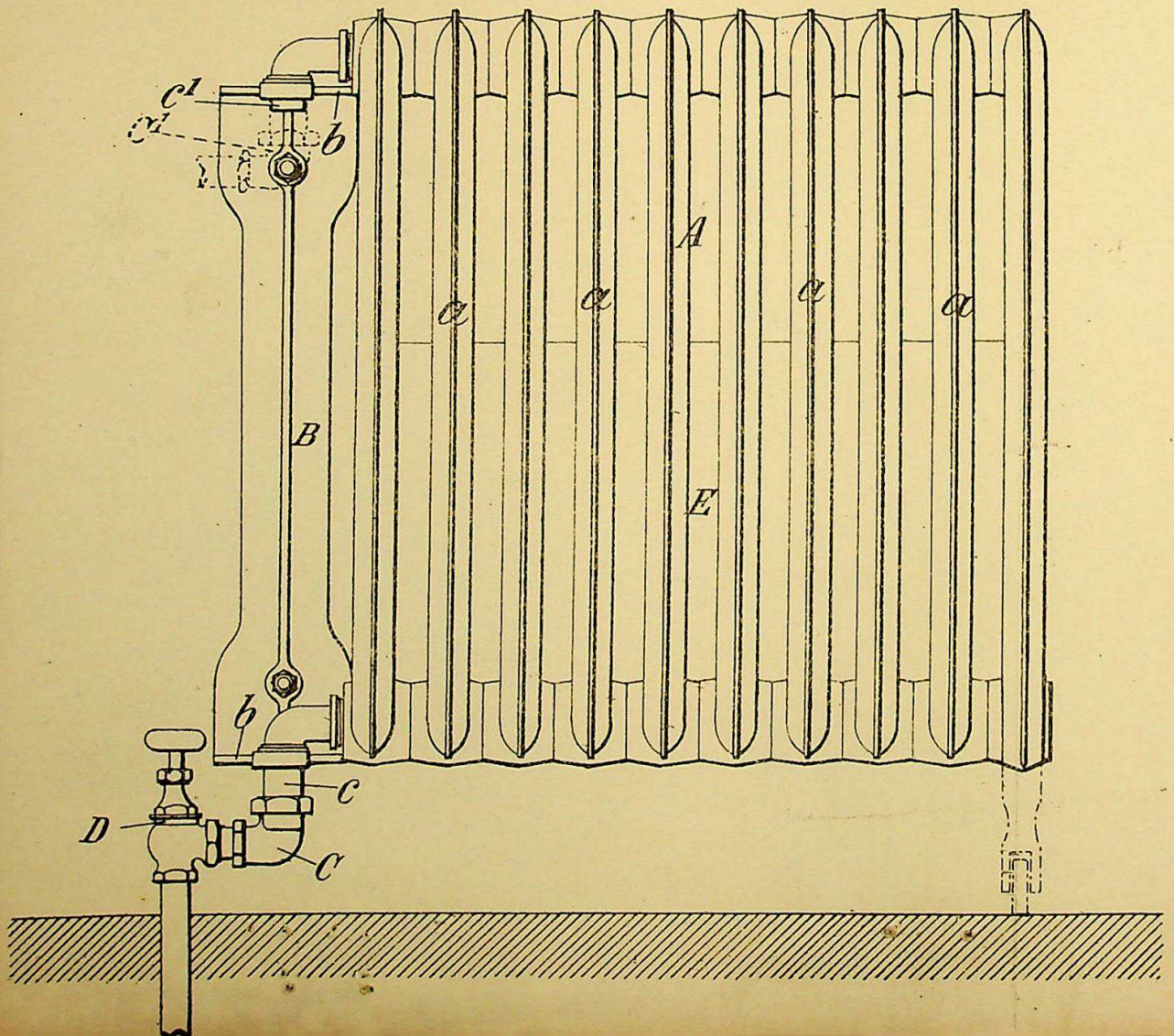
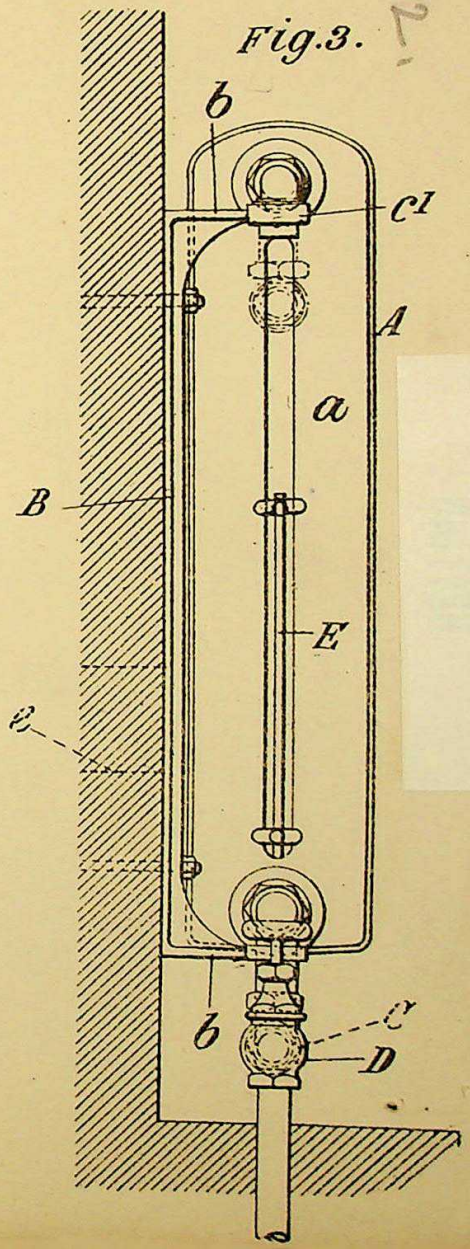


Fig. 3.



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N° 7842 A.D. 1898

DUPLICATE

Date of Application, 1st Apr., 1898

Complete Specification Left, 31st Dec., 1898—Accepted, 4th Feb., 1899

PROVISIONAL SPECIFICATION.

Improvements in or connected with Heating and Cooling Apparatus, more especially intended for Use in Hospitals and other Buildings.

I, THOMAS KIRKLAND, of 17, Victoria Street, Westminster, in the County of London, Civil Engineer, do hereby declare the nature of this invention to be as follows:—

This invention relates to heating and cooling apparatus, more especially intended for use in hospitals and other buildings; and it has reference particularly to that kind or class of apparatus known as "swinging" radiators, that are adapted to be pivoted or swung upon their supports.

The object of my invention is to provide a swinging heat radiator or cooling apparatus that shall be simple in construction and efficient in use, and that shall be capable of being readily erected or adjusted and cleaned.

An important feature of my invention consists in providing the radiator or cooling apparatus with a tube or pipe forming the centre or axle of the pivotal bearing or support such tube communicating with the connection or connections for the supply and return of the heating or heat absorbing fluid by means of a gland or glands.

According to one construction of my invention, when applying the same for example to a single pipe service for heating apparatus I may arrange the aforesaid tube or pipe at the side or end of a radiator parallel thereto. At its upper extremity said tube is bent to a right angle and is connected to the adjacent section of the radiator by a suitable joint. At the lower end said tube is provided with a T branch connection which is similarly connected to the radiator. Below this T branch the tube enters a gland and stuffing box provided at the end of the supply connection. Suitable bearings, carried by brackets or the like attached to a wall or standard, are arranged near the top and bottom of the said tube or pipe. In order to facilitate the erection or dismounting of the radiator I may divide the tube or pipe at a point between the bearings and provide a suitable connecting piece; or the said tube may be divided at the aforesaid branch, the two portions thereof being screwed into the opposite ends of said branch.

In cases where a two pipe system is employed, I arrange the supply connection at the upper extremity of the said tube and provide the same with a T branch for connecting it to the radiator. The top of said tube is provided with a gland and stuffing box into which the extremity of the supply connection enters; and the connection with which the bottom of the tube communicates becomes the return or outflow connection. Obviously, in such cases the tube must be plugged or stopped, so as to prevent a direct communication between the supply and return. Or the middle portion of the tube may be dispensed with. I prefer however to retain the same in order to maintain the alignment of the bearings and facilitate their adjustment.

[*Price* 8*d*.]

According to another construction of my invention I may dispense with the upper portion of the said tube and with the bearing brackets, and employ in place thereof a short tube connected at its upper extremity to the lower part of one of the sections of the radiator and communicating at its lower extremity through a gland and stuffing box with the connection of, say, a single pipe system. This short tube is supported in a bearing or bearings secured to the floor; and the opposite end of the radiator is provided with castors or rollers. In order to avoid strain on the bearing when the radiator is turned or swung around the same, I prefer to arrange that the force tending to move the same is always applied in the horizontal plane of the bearing. This may be effected, for example, by pivoting a light rod or handle at a suitable part of the radiator; said rod being weighted or controlled by a spring so as to normally assume an upright position.

In order to facilitate cleaning the radiator or cooling apparatus I so construct the same that the sections are separated by intervals of somewhat greater width than in radiators at present constructed.

Obviously my invention is applicable to the heating or cooling of railway and other vehicles, or of any other structures or places.

Dated this 1st day of April 1898.

HASELTINE, LAKE & Co.,
45, Southampton Buildings, London, W.C., Agents for the Applicant.

COMPLETE SPECIFICATION.

Improvements in or connected with Heating and Cooling Apparatus, more especially intended for Use in Hospitals and other Buildings.

I, THOMAS KIRKLAND, of 17, Victoria Street, Westminster, in the County of London, Civil Engineer, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to heating and cooling apparatus more especially intended for use in hospitals and other buildings; and the said invention has reference particularly to that kind or class of apparatus known as "swinging" radiators that are adapted to be turned about their supports.

The object of my invention is to provide a swinging heat radiating or heat absorbing apparatus that shall be simple in construction and efficient in use and capable of being readily erected or adjusted and cleaned.

An important feature of my invention consists in providing the apparatus with a pivotal bearing or support, or bearings or supports, having a tubular axle communicating by means of a gland or glands with the pipe or pipes for the supply and return of the heating or heat absorbing fluid.

In order that my invention may be clearly understood and readily carried into effect I will describe the same more fully with reference to the accompanying drawings, in which;—

Figure 1 is a plan,

Figure 2 a side elevation, and

Figure 3 an end elevation, of one form of swinging radiator constructed according to my invention.

A is the radiator, the sections a, a of which are separated by a space somewhat greater than has heretofore been usual, in order to facilitate the cleaning

of the radiator. B is a wall bracket, which may be of any suitable construction, having two arms *b*, *b*, in which are provided bearings for the pivots *c*, *c*¹ formed on lugs connected to the radiator. In the drawings I have shown in full lines a radiator suitable for a single-pipe service. In this case the upper lug and pivot may be solid, the lower lug and pivot always being tubular. The lower pivot is prolonged a short distance below the bracket arm and enters the swivel gland C communicating with the pipe service. Any suitable form of stuffing box may be employed with the said gland. D is a stop-valve for enabling the radiator to be temporarily put out of action when desired.

When a two pipe or circulating service is employed, the upper lug and pivot *c*¹ are tubular and similar in construction to the lower lug and pivot. A gland C¹ (shown by dotted lines) is provided, into which the pivot *c*¹ enters, and the said gland constitutes the termination of the supply pipe connection. A stop-valve similar to the stop valve D is also provided.

In connection with large and heavy radiators I prefer to employ, at the end opposite to the support, a foot provided with a castor or roller, so as to afford an additional support for the radiator. Such a foot provided with a roller is shown in dotted lines in Figure 2 of the drawings.

My improved construction of swinging radiator not only permits of its ready adjustment but also enables it to be easily removed by slackening the gland nuts and lifting the radiator to disconnect the pivots *c* and *c*¹ from the glands C, C¹, and from the bearings in the bracket arms *b*, *b*. Any shifting of the connection or connections of the pipe service or services is unnecessary.

It is to be understood that I do not limit myself to the precise construction illustrated, as it is obvious I may vary the details of construction without departing from the nature of my invention.

For example, I may employ a single tubular pivot or pipe passing through the bearings in both the arms of the supporting bracket, and bent at its extremities, or provided with T branches, so as to connect the same with the adjacent section of the radiator. One or both ends of this tubular pivot (according as it is adapted for a single pipe or a two pipe service) enters a gland and stuffing box provided at the end of the connection to the service pipes. In order to facilitate the erection or dismounting of the radiator I may divide the tubular pivot or pipe at a point between the bearings and provide a suitable connecting piece. Obviously, in the case of a two-pipe service, the tubular pivot must be plugged or stopped to prevent a direct communication between the supply and return.

In cases where it may be undesirable to fix a supporting bracket on the wall, I may employ, in place of the above described lugs and tubular pivots, a short tube connected at its upper extremity to the lower part of one of the sections of the radiator and communicating at its lower extremity through a gland and stuffing box with the connection of, say, a single pipe system. This short tube is supported in a bearing or bearings secured to the floor; and the opposite end of the radiator is provided with castors or rollers such as that shown in Figure 2. In order to avoid undue stress on the bearing when the radiator is turned or swung around the same I prefer to arrange that the force tending to move the radiator is always applied in the horizontal plane of the bearing. This may be effected, for example, by pivoting a light rod or handle at a suitable part of the radiator; said rod being weighted or controlled by a spring so as to normally assume an upright position.

Swinging radiators are often placed in front of an aperture *e* in the wall, through which air is admitted. This air is thus brought into contact with the radiator and heated. In order to effect this heating of the air in a more efficient manner, I employ a baffle plate E arranged longitudinally in the radiator and passing between the lower portion of the sides of each section, as shown in

Figures 2 and 3. This baffle plate is detachably mounted in the radiator so as to be capable of ready removal for cleaning or other purposes.

Although I have fully described my invention with reference to a heat radiator only, it is obvious that my said invention can be equally well applied to heat absorbing apparatus.

Obviously also my invention is applicable to the heating or cooling of railway and other vehicles, or of any other structures or places.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. The combination with a swinging heat radiating or heat absorbing apparatus, of a tubular supporting pivot substantially as described and for the purpose specified.

2. A swinging heat radiating or heat absorbing apparatus having its parts constructed and combined substantially as described with reference to the accompanying drawings for the purposes specified.

Dated this 31st day of December 1898.

HASELTINE, LAKE & Co.,
45, Southampton Buildings, London, W.C., Agents for the Applicant.

Redhill: Printed for Her Majesty's Stationery Office, by Malcomson & Co., Ltd.—1899.